

WE CLAIM:

1. A self-adjusting roof-rake-head comprising a central housing support structure, a plurality of deeply curved tines and a female flange fitting, all integrally formed;
2. Said self-adjusting roof-rake-head, a one-piece unit made of lightweight material having the characteristics of flexibility, resilience, molecular memory and durability;
3. Said central housing support structure having a top surface plate, a convex front support wall, interior support walls, a rear support wall, flange fitting and non-parallel side support walls;
4. Said rear support wall having an opening containing a female flange fitting;
whereby a telescopic pole can be attached allowing a person to clear pine straw and leaf debris from pitched roof planes and V-shaped roof angles while standing at ground level or on a ladder.
5. The side support walls angle outward from the rear wall as they extend forward to the lateral ends of said convex front support wall;
6. Said plurality of deeply curved tines extend from the front support wall and are entirely unconfined and unencumbered throughout the length of the tines, with the two shortest tines located at the outer edges, left and right, of the convex front wall, with the remaining tines progressively longer the closer they are located to a center tine, which is the longest tine, creating a wedge-shaped configuration at the tine tips;
whereby the tines individually self-adjust as they descend into the apex of a V-shaped angle where two roof planes meet, flexing and forming simultaneously at different degrees of angle to both roof planes of a V-shaped angle, allowing for pine straw and leaf debris to be gathered and moved downward off both roof planes simultaneously into the apex of a V-shaped angle, thereby allowing debris to be cleared by drawing the rake downward along the length of the V-shaped angle to and off a roof edge.

CLAIMS cont'd.

7. The tines are of varying length, width and curve radius;
8. The tines immediately adjacent to the left and right of the center line are equal in width to the center tine, all other tines are narrower in width;
9. All tines have an upper tine plane with a lower support ridge perpendicular to and located along the center axis of the bottom side of the upper tine plane;
whereby allowing for the tines to flex at different angles to the convex front wall and roof planes simultaneously, causing tines to assume their initial horizontal alignment and spacing between tines after roof planes creating a V-shaped angle have been cleared;
10. Said lower support ridges are narrower in width than the width of the upper tine plane;
11. The depth of the lower support ridge of all tines at the front support wall is approximately twice the width of the upper tine plane, and said lower support ridges along the bottom side of the upper tine plane taper from the front support wall to a point near the tips of the tines;
12. The tine tips are equal in depth to the upper tine plane and are convex from side to side.

Patent Application of J.Coyne and R.Coyne for 'The ROOF-RAKER'

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CONCLUSIONS, RAMIFICATIONS AND SCOPE

Pine tree needles range from $1\frac{1}{2}$ " to 18" in length depending on the species, and there are over 90 species of Pine trees. These needles are extremely hearty and durable, often taking years to decompose after they fall. When they fall on a roof they tend to intertwine and weave together in mat form. If not removed periodically they can create costly problems for homeowners.

After careful study of all known raking implement patents we did not find one capable of clearing roof surfaces as efficiently or as safely as The ROOF-RAKER. Very little physical strength or effort is required, making it possible for young teen-agers or elderly retirees to use our device. And the economies are quite considerable when compared to costs of commercial roof maintenance services.

While The ROOF-RAKER is designed primarily to remove pine straw and leaf debris from roofs of houses it can also be used to effectively remove small branches, twigs, pine cones and other organic debris.

We visualize companion devices such as an attachment that would protrude at right angles from a connecting pole to assist a user in removing pine straw and leaf debris from behind chimneys and skylights.

We also visualize the possibility of our device being clamped, fastened or otherwise permanently attached to a lightweight telescopic or other long pole, forming a single unit.

Further, after many visits to home improvement stores such as Home Depot, Lowe's, Grayco, WalMart, Ace Hardware and TruValue Hardware we could not find a product specifically made to remove pine straw and leaf debris from roofs of houses. Nor could we find a product that resembles our invention or that could achieve the stated purpose of our invention. We therefore respectfully request early approval of our Patent Application.